

WHAT IS CLAIMED IS:

1. A PCB antenna for receiving different polarization signals operated with a signal processing unit, the PCB antenna comprising:

a substrate ;

5 an emission electrode printed on the substrate, and having a plurality of circular electrodes and a plurality of metal splices for receiving a polarization signal, wherein the metal splices are located between the circular electrodes and respectively connected with each circular electrode; and

10 a receiving unit located one of the ends of the substrate, and connected with the circular electrodes and the signal processing unit via an external transmission unit.

2. The PCB antenna as claimed in claim 1, wherein the circular electrodes include two circular electrodes of different sizes.

15 3. The PCB antenna as claimed in claim 2, wherein there are three metal splices connected with the two circular electrodes.

4. The PCB antenna as claimed in claim 2, wherein the two electrodes of different sizes have a first circular electrode and a second circular electrode, the first circular electrode having a first outer diameter and a first inside diameter, the second circular electrode having a second outer diameter and a second inside diameter, the first outer diameter being
20 smaller than the second inside diameter.

5. The PCB antenna as claimed in claim 4, wherein the ratio of the first outer diameter to the first inside diameter is between 1.65 ~ 1.75.

6. The PCB antenna as claimed in claim 4, wherein the ratio of the second outer diameter to the second inside diameter is between 1.3 ~ 1.35.

5 7. The PCB antenna as claimed in claim 4, wherein the ratio of the second inside diameter to the first outer diameter is between 1.35 ~ 1.45.

8. The PCB antenna as claimed in claim 1, wherein the receiving unit is a coaxial fed unit or a microstrip fed unit.

10 9. The PCB antenna as claimed in claim 7, wherein the coaxial fed unit is connected with an external transmission line with a shielding net for being connected with the signal processing unit.

10. The PCB antenna as claimed in claim 7, wherein the microstrip fed unit is printed on the substrate and connected with the signal processing unit via the external transmission unit.

15 11. The PCB antenna as claimed in claim 1, wherein the polarization signal is co-polar signal or cross-polar signal.